



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT

INVENTOR(S) : Gaurav Sharma, et al.
TITLE : CALIBRATION SYSTEM FOR DOCUMENT
PROCESSING SYSTEM INCLUDING VISUAL LAYOUT
VALIDATION FOR TARGET MEASUREMENTS
APPLICATION NO. : 09/725,998
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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Sir:

The Applicants request review of the Final Rejection in the above-identified application. No amendments are being filed with this request, but a minor amendment to independent claim 1 is pending in a proposed Amendment After Final. This request is being filed with a Notice of Appeal. The review is requested for the reasons stated on the following five (5) sheets, but primarily because the Examiner's citation to the only applied reference is clearly erroneous in its interpretation of the teachings therein.

CERTIFICATE OF FIRST CLASS MAILING

I hereby certify that this paper and/or fee is being deposited with the United States Postal Service as First Class Mail service and is addressed to Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Cathryn Terchek
Cathryn Terchek

Date: *December 2, 2005*

The Present Application

The present application is directed to recovering from common "mis-orientations" of the target on the measurement stage through a process of reordering the measurements, i.e., the user through human error mistakenly "flips" either the system output sheet or calibration test sheet in the calibration process so they are either relatively 90° or 180° out of order and no meaningful calibration on the system can be performed. Characterization software generates a target with a set of color patches specified in terms of DPS control values (e.g., CMYK signals). The printed target is measured by a measurement stage. The measured values are provided to the characterization software. The software uses the correspondence between the target control values and the DPS measured values to derive the DPS characterization profile or calibrating function. Computation of the calibrating function requires an accurate correspondence between the particular order of printing and measuring as the same set of patches may be measured in many different ways. If it is determined that the measurement order is incorrect, the system re-orders the measurement into a correct measurement order instead of time-consuming re-measurement. The measurement re-ordering may be guided either by a visual confirmation from a user or through an automatic correlation of the color measurements and the device control values.

The Cited Reference

Falk is directed to translating RGB values into density values. Falk discloses a calibration image 500 which is scanned in to produce a scanned calibration image 205. The scanning of the test strip 600 produces scanned strip 216. The test strip 600 is a standard test strip which has a plurality of gray scale patches 601 each having a known absolute density value. A scanner profile module 207 compares scanned test strip data 216 with the test strip density file 205 to determine a mapping between the scanned RGB data 500 and absolute density. Scanner profile compensates each gray scale patch 601 to adjust for differences in scanning gray values as opposed to scanning pure CMYK toner values. Print density module 217 generates a printer profile 214 by using the calibration data 204, calibration image 215 and RGB to density converting map of the scanner profile 207. Calibration profile set 211 is generated using characterization profile set 208 and printer profile 214. A user may edit characterization profile set 208 after which calibration system 200 generates an updated calibration profile 212.

It is important for this Review to note with reference to FIG. 5 that calibration image 500 includes an orientation arrow 503, as well as registration marks 502. Both the arrow and the

registration marks are required to establish an orientation for the calibration process (col. 8, lines 7-10) – and they are there so that the operator can manually accomplish the proper orientation.

In discussing an alternative embodiment, the specification states that where a pseudo-random sequence of test patches is desired, an “arrangement key” is printed on the calibration image so that the calibration system can generate the same sequence (col. 5, lines 33-47).

In yet another embodiment, where the calibration patches are inverted in a mirror image, the system must so detect that the inversion option has been selected so that the “image has the proper orientation and can be included in the calibration process” (col. 5, lines 47-65).

In the Applicants’ response to the first Examiner’s Action, the Applicants requested the Examiner to cite in the specification of Falk any teachings of the capability of Falk to identify a mismatch in orientation and then a capacity for re-ordering of the test patch data to achieve a proper orientation match so that the calibration process can proceed. The Examiner was unable to so respond to Applicants’ request in the Final Action and again merely responded that the cited reference allows “a user to adjust in accordance with the measured color densities”.

The adjustment process in Falk has nothing to do with detecting mis-orientation, and re-ordering the test data to achieve a proper orientation. The adjustment process in Falk merely deals with adjusting stored calibration profiles based upon the existent measurement data of the most recent test (col. 8, lines 40-46). This is not orientation adjustment as called for in the pending claims. The reference clearly indicates that the user must match the “placement information that instructs a user where to place test strip 600 and where to place a color control test strip so that both can be located in scanned data.” (col. 7, lines 23-26) If a user were not to place the strip properly, i.e., the problem sought to be overcome by the subject application, the calibration process of Falk would certainly fail – or at least there is no teaching in the reference in how to deal with such a situation.

The Claims Distinguish Over the Teachings of the Reference

Claim 1 currently recites:

1. A method of calibrating a document processing system (DPS) comprising steps of:
providing a target comprised of a plurality of target elements to the DPS; generating a DPS output from the target, wherein the DPS output includes a plurality of output elements corresponding to the target elements;
measuring the DPS output relative to the target for computing a calibrating function for the

DPS; and,

when the measuring indicates a mismatch between the target elements and the output elements, reordering the measured output elements for matching the measured output elements to the target elements whereby the computing of the calibrating function is done without having to re-measure the output elements.

Also, claim 23 alternatively recites:

23. (Currently Amended) A method of calibrating a DPS from a predetermined target to expedite computing a calibrating function for the DPS from a DPS output based on the target, comprising the steps of:

providing the target to the DPS and associating the target with a corresponding measuring process;

generating an output from the DPS;

disposing the output to be measured in a selective position in a measuring device for the computing of the calibrating function;

identifying a mis-ordering of the measurements of the target in the DPS output from a desired order of measurement;

based on the identified mis-ordering, providing to a user of the DPS a representation of the correct corresponding measuring process including a desired position of the output orientation and order of measurement;

visually validating by the user of the selected position relative to the representation;

measuring the output relative to the target; and,

computing the calibrating function from the measuring.

There are thirty-one (31) claims pending in the application of which claims 1, 12, 20, 23 and 29 are independent.

It is respectfully submitted that Falk fails to disclose or suggest a measuring test data calibration process to detect a mismatch in alignment between target test elements and system output elements by identifying an indicative threshold set by a preselected value representative of the mismatch, and then re-ordering the test data in a manner to properly align the target and system elements so that the calibration processing may continue. There is no longer a need for the operator to manually restart a calibration process after correctly re-orienting the relative elements.

Response to Examiner Arguments

The Examiner has cited a case precedent for the proposition that if the prior structure is capable of performing the intended use, then it can meet a claim. The intended use must result in a manipulative difference as compared to the prior art.

The pending claims all require a completely novel manipulative difference than what is taught or suggested in Falk. That is, there must not only be a detection of a mismatch of relative order of test patches and system outputs, there must also be a processing of the test data to effect realignment so that the test targets and outputs match in relative orientation. Falk is clearly incapable of performing this intended use or accomplishing this manipulative difference. Falk requires matched orientation as indicated by orientation arrow 503 and registration marks 502 to affect the calibration process taught therein. The vague and generic citation to Falk for its adjustment process as in any way suggestive of the mismatch detection and re-orientation of test data as claimed in the pending claims is clearly erroneous.

The subject system comprises a novel solution to a commonly occurring problem in a calibration process – typically due to human error – which could only be resolved in the past through manual operator intervention.


CONCLUSION

For the reasons detailed above, Pre-Appeal Review is respectfully requested. In the event personal contact is considered advantageous to the disposition of this case, please telephone the undersigned at the listed number.

Respectfully submitted,

FAY, SHARPE, FAGAN,
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Date: 12/2/05



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